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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,615	07/18/2000	Gary W. Sinde	6573-62441	9299
23643	7590	10/21/2004	EXAMINER	
BARNES & THORNBURG 11 SOUTH MERIDIAN INDIANAPOLIS, IN 46204			CHAMPAGNE, DONALD	
			ART UNIT	PAPER NUMBER
			2121	

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/618,615

**Applicant(s)**

SINDE, GARY W.

**Examiner**

Donald L. Champagne

**Art Unit**

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-124 is/are pending in the application.
- 4a) Of the above claim(s) 41-124 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) •                      | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12-12-00 &amp; 6-11-01</u> •  | 6) <input type="checkbox"/> Other: _____                                    |

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - A. Claims 1-40, drawn to method and apparatus for determining the source of ingress noise, classified in class 725, subclass 125.
  - B. Claims 41-124, drawn to method and apparatus for determining the condition of a network, classified in class 600, subclass 449.
2. Inventions A and B are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention B has utility separate from that of invention A such as evaluating the condition of human bone *in vivo*. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, or patentability requirements, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Richard D. Conard, Esq., on 14 October 2004, a provisional election was made without traverse to prosecute the invention of A, claims 1-40. Affirmation of this election must be made by applicant in replying to this Office action. Claims 41-124 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1-4, 6-9, 11-14, 16-19, 21-24, 26-29, 31-34 and 36-39 are rejected under 35 U.S.C. 103(a) as being obvious over Nickolls et al. (US005251626A).

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7. Nickolls et al. teaches (independent claims 1 and 21) a method and apparatus for detecting arrhythmias (abnormal heart rhythms) by electrocardiographically (ECG) monitoring the human electrical system, including classifying ECG waveforms (col. 5 lines 48-54), which reads on storing frequency spectra of known arrhythmias (col. 7 lines 3-8 and Figs. 7-9), comparing the input ECG spectra with the spectra of known arrhythmias, and determining from the comparison which of the frequency spectra of known arrhythmias is closest to the input ECG spectra (col. 11 lines 28-38 and Figs. 4 and 5, described at col. 12 line 11 to col. 13 line 65).<sup>1</sup>
8. Nickolls et al. does not teach that said method and apparatus for identifying internally generated ECG noise is applicable for identifying "ingress noise", which is to say externally generated noise in communication networks. Because the two problems are mathematically analogous, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply the teachings of Nickolls et al. to the identification of ingress noise.
9. Nickolls et al. also teaches analog, digital and hybrid analog-digital networks (col. 6 lines 22-23 and col. 11 lines 3-4) and optimization by use of a back propagation neural network (col. 5 lines 48-49).
10. Claims 5, 10, 15, 20, 25, 30, 35 and 40 are rejected under 35 U.S.C. 103(a) as being obvious over Nickolls et al. in view of Eberhart et al. (US006516309B1). Nickolls et al. does not teach a particle swarm optimizer. Eberhart et al. teaches a particle swarm optimizer (PSO, Abstract and col. 2 line 47 to col. 3 line 10). Because Eberhart et al. teaches that PSO can improve the efficiency of diagnostic neural networks (col. 1 line 64 to col. 2 line 7), it would have been obvious to one of ordinary skill in the art, at the time of the invention, to add the teachings of Eberhart et al. to those of Nickolls et al.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Champagne whose telephone number is 703-308-3331<sup>2</sup>. The examiner can normally be reached from 6:30 AM to 5 PM ET, Monday to Thursday.

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<sup>1</sup> MedicineNet.com defines "QRS complex".

<sup>2</sup> These numbers will change on 29 October 2004. The examiner can be contacted thereafter by email or by asking any USOPTO receptionist, including at 703-306-5771, for the examiner's new telephone number.

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The examiner can also be contacted by e-mail at [donald.champagne@uspto.gov](mailto:donald.champagne@uspto.gov), and *informal* fax communications (i.e., communications not to be made of record) may be sent directly to the examiner at 703-746-5536<sup>2</sup>.

12. The examiner's supervisor, Anthony Knight, can be reached on 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306<sup>2</sup>. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5771.
13. **ABANDONMENT** – If examiner cannot by telephone verify applicant's intent to continue prosecution, the application is subject to abandonment six months after mailing of the last Office action. The agent, attorney or applicant point of contact is responsible for assuring that the Office has their telephone number. Agents and attorneys may verify their registration information including telephone number at the Office's web site, [www.uspto.gov](http://www.uspto.gov). At the top of the home page, click on Site Index. Then click on Agent & Attorney Roster in the alphabetic list, and search for your registration by your name or number.

**DONALD L. CHAMPAGNE**  
**PRIMARY EXAMINER**

Donald L. Champagne  
Primary Examiner  
Art Unit 2121

15 October 2004

A handwritten signature in black ink, appearing to read 'DL Champagne', is written over a horizontal line. The signature is stylized and cursive.